"Flue Cleaner"

Field of the Invention

The invention relates to a flue cleaner which can be used with a stove or fireplace for the purposes of clearing soot and residues from the chimney associated with that stove or fireplace.

Disclosure of the Invention

Accordingly the invention resides in a flue cleaner comprising a containment vessel having an opening providing restricted communication between the interior and exterior of the vessel, the vessel being formed of a non-combustible heat resistant material, the interior of the vessel containing a soot removal agent.

According to a preferred feature of the invention the containment vessel is formed of metal. According to one embodiment the containment vessel is formed of steel.

According to a preferred feature of the invention the vessel comprises a length of tube, at least one end of the tube being open, at least one end being partially closed by an inwardly directed flange to define the opening.

According to a preferred feature of the invention the opening is closed by a closure formed of a material which will be consumed slowly upon the flue cleaner being placed in a fire.

According to a preferred feature of the invention the soot removal agent is encased within the vessel within a settable composition which will harden once being introduced into the vessel and which will be consumed slowly upon the flue cleaner being placed in a fire. According to one embodiment the comprises a mixture of sawdust and a binding agent. According to a preferred feature of the invention the composition controls and restricts the combustion of the sawdust when the flue cleaner is placed in a fire.

According to a preferred feature of the invention wherein the soot removal agent is selected from zinc, tin, aluminium or any combination thereof.

According to a preferred feature of the invention the soot removal agent is coated on a substrate. According to a preferred feature of the invention the substrate comprises a metal foil and/or sheeting.

According to a preferred feature of the invention the soot removal agent comprises a quantity of particles and/or granules of the soot removal agent.

According to a preferred feature of the invention the soot removal agent is formed as a single body. According to one embodiment the soot removal agent is formed as an ingot.

The invention will be more fully understood in the light of the following description of several specific embodiments.

Brief Description of the Drawings

The description is made with reference to the accompanying drawings of which:

Figure 1 is a schematic plan view of a flue cleaner according to the first embodiment;

Figure 2 is a schematic side elevation of a flue cleaner according to the first embodiment;

Figure 3 is a schematic end elevation of a flue cleaner according to the first embodiment;

Figure 4 is a schematic sectional elevation of a flue cleaner according to the second embodiment; and

Figure 5 is an isometric view of a flue cleaner according to the third embodiment.

Detailed Description of Specific Embodiment

Each of the embodiments is directed to a flue cleaner which is intended to be placed in the fire in a stove or a fireplace for the purposes of clearing soot and/or residues which can accumulate in a chimney associated with that stove or fireplace.

The flue cleaner according to the first embodiment as shown at Figures 1, 2, and 3 comprises a containment vessel 11 formed by a length of tube 13 which is partially closed at each end. The tube 13 is are formed of mild steel or any other suitable form of metal which is non-combustible and will resist the heat generated by a fire in a stove or fireplace. The interior of the vessel 11 as defined by the interior of the tube 13 and the inner face of the flanges 15 accommodates a soot removal material which in the case of the embodiment comprises a metal ingot 15 which is accommodated within the interior of the vessel 11.

The metal ingot is retained in the tube by being encased within a mixture of a settable composition being a mixture of sawdust and a binding agent which will harden once being introduced into the vessel 11.

In use the flue cleaner according to the embodiment is placed in a stove and/or fireplace either during the building of the fire or while the fire is burning. On being placed into the fire the plugs 21 will be consumed by the fire and the interior of the containment vessel 11 will be heated to cause the melting and subsequent vaporisation of the metal of the metal ingot. On vaporisation the vapours will be permitted to exhaust from the interior of the vessel into the fire and to be carried by the combustion gases into the chimney for the purposes of clearing soot and residue.

The flue cleaner according to the second embodiment shown at Figure 4 comprises a containment vessel 111 formed by a length of tube 113 which is open at each end. Each end of the tube 113 supports an inwardly directed flange 115 at a position spaced short distance inwardly from the open end to

provide a central opening 117 at each end. The tube 113 and the flange 115 are formed of mild steel or any other suitable form of metal which is non-combustible and will resist the heat generated by a fire in a stove or fireplace. The interior of the vessel 111 as defined by the interior of the tube 113 and the inner face of the flanges 115 accommodates a soot removal material which in the case of the second embodiment as shown in the drawing comprises tin plate which is formed into a loose roll to be accommodated within the interior of the vessel 111. Alternatively the soot removal agent can comprise a metal ingot as described in relation to the first embodiment encased within a mixture of a settable composition being a mixture of sawdust and a binding agent which will harden once being introduced into the vessel. The open end portions of the tube 13 which are axially outward of the flanges 115 are closed by a closure plug 121 which is formed from a mixture comprising a settable composition being a mixture of sawdust and a binding agent which is applied to each end of the tube 113 to close the ends thereof and which will harden to close the ends.

It should be appreciated that any suitable form of soot removal material can be accommodated by the containment vessel for the purposes of the embodiment and such materials can comprise tin or materials containing tin (such as tin plate), zinc and/or materials containing zinc (such as galvanised iron), aluminium and/or materials containing aluminium and/or any combination of the above materials.

The flue cleaner according to the third embodiment shown at Figure 5 comprises a containment vessel 211 formed by a length of tube 213 which is open at each end. The tube is of generally of elliptical cross-section with the major axis adapted to be oriented in a substantially horizontal alignment. Each end is configured with a central portion 215 of very narrow opening while to either side the opening 217 is expanded somewhat to provide a substantially dumbbell or "figure-8" shaped profile. While any of the soot removal materials previously mentioned may be used in this embodiment, this embodiment has been found to be very effective when metallic tin is used as the soot removal material. When used in this way, tin will melt from the heat of a conventional fire. Therefore the

containment vessel 211 must be maintained in a substantially horizontal orientation when in use. When the fire is extinguished, the tin will solidify again and the vessel can be moved if necessary without concern.

Again as a result of the configuration of the containment vessel of the third embodiment, the soot removal material within the vessel 211 is released in a restricted manner. Thus the device can be effective for an extended period of time, typically in the order of several months, without attention.

Throughout the specification, unless the context requires otherwise, the word "comprise" or variations such as "comprises" or "comprising", will be understood to imply the inclusion of a stated integer or group of integers but not the exclusion of any other integer or group of integers.

It should be appreciated that the scope of the present invention need not be limited to the particular scope of the embodiment described above. In particular the containment vessel can take any desired form and shape that is considered appropriate.